

Oak Ridge-Comprehensive Plan  
Comprehensive Plan including 1988 update  
July 1985 and May 1988.

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# Comprehensive Plan

## Including 1988 Update

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February 20, 1989

Honorable Mayor and  
Members of City Council  
City of Oak Ridge  
Oak Ridge, Tennessee

Dear Members of Council:

This 1988 Update to the Comprehensive Plan reviews in summary form the first three years of achievement, development, opportunity, and change which have dynamically reshaped the Comprehensive Plan since its adoption in 1985.

Included in this document is the 1988 Update to the Plan (tan pages), a Summary of the 1988 Policy Changes (yellow pages), and the text of the 1985 Comprehensive Plan (white pages). The 1988 changes were recommended by the Oak Ridge Regional Planning Commission and were subsequently adopted by the City Council on May 16, 1988.

This formal review and update was undertaken in recognition that the Comprehensive Plan is a living document that is continually being reshaped by the actions of City Council in response to new challenges and opportunities which arise within our community. The Plan continues to be utilized by the City for guidance in our efforts to achieve quality growth and development within the community.

As can be noted on the pages to follow, significant progress has been recorded in addressing the key issues of Housing and Population, Employment and Economic Development, General Development, and Quality of Life. This direction, in concert with our service mission as established annually in our Goals and Objectives Program and our economic mission as embodied in the SCORE! Plan, will continue to serve as the foundation for future direction and action in achieving the long-term goals of the City.

A summary of actions or factors which have reshaped the Comprehensive Plan will be annually prepared for incorporation into the Plan to assure that the Plan remains current and that community issues are adequately addressed through its policies and procedures.

Very truly yours,

  
Jeffrey J. Broughton  
City Manager

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# Population and Housing Analysis

This chapter of the Oak Ridge Comprehensive Plan addresses population and housing and handles them in tandem because they are so closely related to one another. This Analysis of Conditions documents and analyzes the current factors and trends which affect population and housing in Oak Ridge, explains how these and other variables are interrelated, and sets forth the major issues to be addressed by the Plan. The topic of population and housing is analyzed according to the following sequence:

- Social and economic characteristics
- General description of the housing stock
- Public housing assistance

## SOCIAL AND ECONOMIC CHARACTERISTICS

This section analyzes the key social, economic, and housing characteristics of Oak Ridge as a basis for a subsequent summary of housing problems and issues in the City. Table 1 lists the key social and economic characteristics of the City of Oak Ridge. These and other more detailed data will be analyzed in subsequent pages.

### Population Growth and Decline

The growth and development in Oak Ridge has been significantly different from most cities in East Tennessee due to its "new town" heritage. Shortly after the establishment of the Manhattan District, the Oak Ridge community had a population of some 20,000 scientists, engineers, and maintenance workers. By July, 1944, the population increased to 50,000 and peaked at 75,000 in 1945. With the completion of the major construction projects and a shift in programmatic emphasis following World War II, the population declined to 30,229 by 1950. Shortly after Oak Ridge became an incorporated community in 1959, the population numbered 27,169.

During the 1960-1980 period, the Oak Ridge population total fluctuated slightly and averaged about 27,700. (Refer to Table 2.) However, nearby communities grew substantially, particularly during the 1970's. This disparity has been a source of great concern in Oak Ridge, as some residents view this lack of growth as an indication of long-term economic stagnation or decline. The loss of 657 persons in Oak Ridge from 1970 (28,319 persons) to 1980 (27,662 persons) is especially disturbing in light of the fact that employment at the Department of Energy and its contractor facilities increased by over 4,000 people during the same period.

A summary of population change in Oak Ridge and nearby Counties is shown by Table 2 for the period 1950 to 1980.

TABLE 1

Selected Social and Economic Characteristics,  
City of Oak Ridge and State of Tennessee

<u>Characteristic</u>	<u>City of Oak Ridge</u>		<u>State of Tennessee</u>
Population			
1980	27,662		
1970	28,319	- 2.3%	+17.0%
Population by Gender, 1980			
Male	13,266	48.0%	46.8%
Female	14,396	52.0%	53.2%
Number of Households			
1980	11,021		
1970	9,434	+16.8%	+24.4%
Number of Families			
1980	7,991		
1970	7,797	+ 2.5%	+18.2%
Mean Number of Persons per Household			
1980	2.50		2.84
1970	3.00		3.02
Median Age			
1980	35.2		30.1
1970	29.7		28.1
Number of Families with Children Under 18 Years of Age, 1980			
Total	3,798	47.5%	50.2%
Single Parent	615	7.7%	11.0%
Number of Households with Persons 65 and over, 1980	2,115	19.1%	19.3%
Marital Status, 1980 (Persons over 15)			
Married	6,810	85.2%	60.4%
Single, Divorced, Separated, Widowed	1,181	14.8%	39.6%
Minority Racial Group Members, 1980			
Black	1,938	7.0%	15.7%
Other	541	1.9%	1.2%



TABLE 1 (Continued)

Characteristic	City of Oak Ridge		State of Tennessee
High School Graduates, 1980 (Persons 25+ Years of Age)	14,451	80.7%	56.1%
Percentage of Labor Force Unemployed		5.6	7.4
Income of Households, 1979			\$17,462
Mean	\$23,150		\$14,152
Median	\$19,770		
Households with Incomes below Poverty Level, 1980			10.1%
Families	487	6.1	34.0%
Unrelated Individuals	74	21.2	
Occupation, 1980			
Managerial, Professional	4,701	35.4	19.7%
Technical, Sales, Clerical	4,548	34.3	28.0%
Service	1,341	10.1	12.1%
Farming, Forestry	112	0.8	2.6%
Precision Production	1,442	10.9	13.3%
Operators, Fabricators, Laborers	1,117	8.4	24.3%

Source: U.S. Census, 1970 and 1980

The most interesting statistics from Table 1 are those addressing population change and household and family change. The population of Oak Ridge shrank by 2.3 percent from 1970 to 1980 but the number of households increased by 16.8 percent and the number of families by 2.5 percent. This indicates that many people did move into Oak Ridge during that decade but they were predominantly single. This gain was more than offset by the exodus of members of families. That combination of effects reduced the average household size from 3.0 to 2.5 persons.

For Oak Ridge to have sustained its 1970 population level, assuming a constant housing vacancy rate of 5.0 percent, an additional 276 housing units (and households) would have been required. Production of 276 housing units less than necessary for maintenance of a stable population total does not seem to indicate an inherent defect in the operations of the actors involved in the local housing market, considering that almost half of all Tennessee cities between 15,000 and 55,000 population declined in population size during 1970-1980. Nonetheless, knowledge of these factors hardly mitigates the local concern that Oak Ridge is one of just six cities in the 16-county East Tennessee region to have lost population over the last decade.

The Census Neighborhoods with the smallest average household sizes in 1980 were #4, 5, 6 and 12. The percentage of single-person households, particularly persons over age 65, is quite high in these neighborhoods. (Refer to Figure 3, Census Neighborhoods, for the boundaries of the thirteen neighborhoods defined by the U.S. Bureau of Census in 1980).

### Age Distribution

Oak Ridge has experienced a dramatic increase in the median age of its population since 1960. The population of its residents over age 35, and particularly the population over age 55, has increased, while the population under age 16 has declined. This pattern of aging is shown by Table 4. Note that the median age of the Oak Ridge population has increased from 27.2 years in 1960 to 29.7 years in 1970 to 35.2 years in 1980.

The Census data seem to indicate that many "Baby Boom" children have grown and left the community while new households include a high proportion of single people and couples who have delayed childbearing. The median age of the community can, thus, be expected to continue to rise for at least another ten years. This is part of a natural cycle for a maturing community.

TABLE 4

Population Age Distribution in  
Oak Ridge and Tennessee, 1960-1980,  
(Expressed as Percentages)

<u>Age</u>	<u>City of Oak Ridge</u>			<u>State of</u>
	<u>1960</u>	<u>1970</u>	<u>1980</u>	<u>Tennessee</u>
				<u>1980</u>
Under 5	11.9	7.5	5.4	7.3
5-9	12.2	9.8	6.6	4.8
10-15	13.0	13.0	9.6	10.2
16-19	5.1	6.8	6.6	7.8
20-24	4.8	6.6	7.1	9.5
25-34	15.7	12.6	14.5	16.7
35-44	19.0	13.4	12.8	12.0
45-54	12.1	16.3	12.8	10.4
55-64	4.2	9.3	14.4	9.7
65 & Over	2.1	4.7	10.2	11.6

TABLE 4 (Continued)

Age	City of Oak Ridge			State of Tennessee
	1960	1970	1980	1980
16-35 Under 16	37.0	30.3	21.6	22.4
Over 35	25.6 37.4	40 29.7	28.2 50.2	43.6
Over 45	18.4	30.3	37.4	31.7
Over 55	6.3	14.0	24.5	21.3
Over 65	2.1	4.7	10.2	11.6
Median Age	27.2	29.7	35.2	30.1

Source: U.S. Census of Population, 1960, 1970, 1980.

This pattern, along with a lack of local housing alternatives for the elderly, has contributed to fewer of the older housing units in Oak Ridge being placed on the market, especially in the Anderson County portion of Oak Ridge. Consequently, fewer houses have been made available in the lower price range for younger households. Other effects include decreased need for schools, less demand for playgrounds but more demand for senior citizens' recreation programs, and possibly, a more conservative attitude toward municipal expenditures.

The Census Neighborhoods with the highest median age were #4 (45.7 years), #5 (42.5 years), #1 (39.2 years), and #3 (38.0 years). Neighborhoods having the lowest percentages of families with children under age 18 were #13 (69.1 percent), #10 (64.7 percent), #9 (57.3 percent), and #8 (55.2 percent).

#### Education, Race, Income, and Employment

In addition to the population age distribution, several other characteristics distinguish the Oak Ridge population from the surrounding area. Among these are the levels of educational attainment by the Oak Ridge population, the percentage of the population which is nonwhite, and family income.

#### Education:

The education level of Oak Ridge citizens is dramatically higher than in surrounding areas. As indicated in Tables 1 and 5, over 80 percent of the population over 25 years has completed high school, and about one-third of the population has four or more years of college. In fact, Oak Ridge has one of the highest per capita ratios of Ph.D's of any city in the United States. Nearly 1,000 of these highly-trained residents work at the Oak Ridge National Laboratory (ORNL) and many more are employed at K-25, Oak Ridge Gaseous Diffusion Plant, Y-12, O.R.A.U., and D.O.E.

The percentage of white residents who have completed four years of college is 34 percent compared to only 15 percent for black residents. The Census Neighborhoods with the lowest percentages of residents completing high school were Neighborhoods #4, 5, 6, 7 and 12 (refer to Figure 3).

# Land Use and Development Analysis

This section of the General Development chapter of the Oak Ridge Comprehensive Plan addresses land use and land development. The analysis of land use conditions and issues sets the stage for policy and plan formulation by covering the following topics:

- Major land use influences,
- Pattern of urban development, and
- Zoning and subdivision regulations.

## MAJOR LAND USE INFLUENCES

### Ownership and Development

The City of Oak Ridge covers approximately 89.9 square miles (57,541 acres). However, only 13,615 acres are in private ownership and comprise most of the urban portion of the municipality. (Refer to Figure 2, City of Oak Ridge). The remaining area is controlled by the U.S. Department of Energy (62 percent), the Tennessee Valley Authority (4 percent), the University of Tennessee (4 percent), and the City of Oak Ridge (5 percent). The University of Tennessee owns 2,230 acres on which it maintains a forestry research center, and the City holds a recreational easement over 778 acres of Tennessee Valley Authority (TVA) land south of the urban area at Haw Ridge.

Approximately 40 percent of the urban portion of Oak Ridge is undeveloped. Some of this undeveloped property is public greenbelt and some is other City property, but most of it is privately owned. This is not to say, however, that all the private, undeveloped land is available for urban use, since topography and other constraints may limit its use. The percentage of commercial and industrial land (excluding DOE plants) is only about 9 percent, while 25-30 percent would have been closer to the national average, according to a 1981 study by the American Planning Association. Housing remains the predominate use of developed property.

### Land Development Constraints

A number of features severely constrain the pattern of urban development in Oak Ridge. One is the amount of steep slope (greater than 20 percent). (The 1985 Plan referred to Figure 7, Land Development Constraints, which was omitted from the report). The City encompasses several tall ridges, including Black Oak (on the north), East Fork, McKinney, Pilot Knob, Pine, Chestnut, Haw, and Copper (on the south). The rugged topography has forced the urban area into a linear southwest-northeast pattern in East Fork, Gamble and Emory Valleys. The difference in elevation from valley floor to ridge top is approximately 300 feet.

Residential development has occurred on the slopes of some of these ridges, but site preparation costs are high and substantial amounts of land must be left as open space.

Another urban development constraint is the ownership of the majority of the City by the DOE. Such land (if developable) has only rarely been released for public purchase since 1959, when the urban portion of the federal reservation was sold off and the City established. The western end of the urban area abuts the DOE property, which constrains further growth.

A third limitation to growth, although much less significant than the first two, is the floodplain of East Fork Poplar Creek, which flows from the Y-12 plant through the western half of the City along the Oak Ridge Turnpike. Figure 7 also illustrates the extent of water service in 1984. Adequate water service to new development locations is limited by elevation and also by the availability of trunk lines to major open areas.

## PATTERN OF URBAN DEVELOPMENT

### Early Development

A plan was devised in 1941 by the U.S. Army Corps of Engineers and Skidmore, Owings and Merrill, Inc., for a settlement south of Black Oak Ridge to house workers for the plants that were to build the first atomic bomb. Two residential neighborhoods were initially planned for approximately 12,000 persons. These were to center on Jackson Square, the town's commercial and administrative center. The need for workers quickly grew, and another neighborhood was added to the east, and subsequently three others to the west. By 1945, Oak Ridge had 75,000 residents, most of them in trailers, dormitories, and other temporary shelters.

The town was divided into halves by the road that was to become Oak Ridge Turnpike. To the north were housing, schools, parks, and a few shops and offices. To the south were industrial areas supporting the main defense plants, which were well removed from the urban area.

One of the principal concepts of the residential sector was the neighborhood. Each had its own elementary school and playground. A small collection of shops was located within walking distance of most residences. Collector streets wound up the side of Black Oak Ridge, and short local streets looped from those. The steep terrain enforced the pattern of short, narrow, curvilinear streets with open space to the rear of the small homes. There were two principal commercial centers: Jackson Square and its western counterpart, Jefferson Center. Several other, small commercial areas were also established, usually near the elementary schools.

The 1948 plan for Oak Ridge envisioned a population growing steadily back from the 35,000 post-war ebb. That document strongly reinforced the initial neighborhood concept by designating locations for new or expanded schools, playgrounds, and shopping areas in established areas and by proposing five similar new neighborhoods south of Oak Ridge Turnpike.

However, this plan recognized the limited ability of Jackson Square and Jefferson Center to serve the community's needs and, thus, proposed a major new shopping center south of the Turnpike.

This main shopping center was to be situated next to the future City's administrative center which was to include City Hall, AEC headquarters, new schools, and a large park. North of the Turnpike was to be the cultural center composed of the new senior high school, an existing junior high school, and athletic and recreation fields. Multiple-family housing was planned to ring most of this area. The entire complex, but most especially the shopping center, was to be the "social and civic center" of Oak Ridge. It would be a place where people could gather not just to shop but to participate in community events, watch others, and enjoy the bright lights and nightlife. The design would be strongly oriented toward the pedestrian to promote strolling and socializing. It would truly be the psychological center of Oak Ridge.

#### Current Pattern of Land Use

An examination of Figure 8, Land Use, 1984, will indicate that the major concepts of the 1948 plan for the City of Oak Ridge have been carried out. The differences between that plan and the current situation are sometimes beneficial and sometimes not. The following description of the various elements of the 1984 land use pattern of Oak Ridge will discuss these differences while pointing out its major strengths, opportunities, and shortcomings.

#### Residential Pattern:

There has been some movement away from the strong neighborhood identification that was initially proposed. The residential areas which grew up in the 1950's, 60's, and 70's did not include neighborhood retail and school centers, and the planned closing of Cedar Hill and Elm Grove Elementary Schools will further erode that concept. Much of the dormitory housing that originally was constructed near each neighborhood center has long since been removed, thus decreasing the ability of people to walk to these locations. Overall, the density of population in Oak Ridge has decreased from its high wartime levels. Also, the more recent residential developments have taken on more of the appearance of traditional American suburbs, with larger lots, no sidewalks, and split-level housing.

Residential density in Oak Ridge is generally low due to the substantial areas of steep slope and the predominance of detached housing. However, lot sizes in the older neighborhoods are small, and most residences are within one mile of the Oak Ridge Turnpike. Newer neighborhoods have substituted larger lots for the public greenbelts which are common in the older portions of the City.

In the central portion of the City (between Pennsylvania and Louisiana Avenues) there is a substantial amount of middle- and upper-density housing, as shown by Figure 8. Most of these are two- and four-unit buildings